

Amendment to the Claims:

Amendments to claims 1, 6, 8, 9, 15, 16-18, 22-24, 26, 31, 33, 34, 40-43 and 47-49 were made with this Response to Fourth Office Action.

Listing of Claims:

1. (currently amended) A method for defining one or more communication channels in an Ultra Wideband system, comprising:

generating at least one code having at least one code element value representing at least one non-temporal characteristic of at least one Ultra Wideband waveform, wherein said at least one non-temporal characteristic comprises at least one of an amplitude ~~and~~ or a waveform type; and

associating said at least one code element value with said at least one non-temporal characteristic to define said one or more communication channels.

2. (cancelled)

3. (cancelled)

4. (cancelled)

5. (cancelled)

6. (currently amended) The method of claim 1, wherein said at least one code element values ~~are~~ is associated with at least one temporal characteristic in addition to said at least one non-temporal characteristic.

7. (previously amended) The method of claim 6, wherein said temporal characteristic corresponds to a position in time.

8. (currently amended) The method of claim 1, wherein each of said at least one code element values comprises an integer or floating-point value.

9. (currently amended) The method of claim 1, wherein each of said at least one code element values indicates any one of:

at least one component;

at least one sub-component of said component; and

at least one smaller component of said sub-component established by recursively breaking down said sub-component into smaller parts,

wherein said at least one component, said at least one sub-component, and said at least one smaller component are defined within at least one layout comprising a range of non-temporal ~~pulse~~ characteristic values.

10. (original) The method of claim 9, wherein any one of said at least one component is any one of:

a same size; and

a different size

than others of said at least one component, and

wherein any one of said at least one sub-component is any one of:

a same size; and

a different size

than others of said at least one sub-component; and

wherein any one of said at least one smaller component is any one of:

a same size; and

a different size

than others of said at least one smaller component.

11. (original) The method of claim 9, wherein said at least one component, said at least one sub-component, and said any number of smaller components comprise at least one non-allowable region established by at least one rule.

12. (original) The method of claim 11, wherein said at least one rule establishing at least one non-allowable region is based on any one of:

a minimum value; and

a maximum value,

of any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components.

13. (original) The method of claim 11, wherein said at least one rule establishing at least one non-allowable region is based on minimum and maximum values within any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components,

within a layout.

14. (original) The method of claim 11, wherein said at least one rule establishing at least one non-allowable region is based on at least one non-temporal characteristic value of at least one other pulse.

15. (currently amended) The method of claim 14, wherein said at least one rule establishing at least one non-allowable region establishes a minimum value difference from said at least one non-temporal characteristic value or a maximum value difference from said at least one non-temporal characteristic value.

16. (currently amended) The method of claim 14, wherein said at least one rule establishing at least one non-allowable region establishes a region bounded by a minimum value difference from said at least one non-temporal characteristic value and a maximum value difference from said at least one non-temporal characteristic value.

17. (currently amended) The method of claim 9, wherein an established offset value is used to specify an exact non-temporal characteristic value within any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components indicated by said at least one code element value.

18. (original) The method of claim 17, wherein an absolute offset value is added to the minimum value of the component, sub-component, or smaller component to which the at least one code element value is mapped.

19. (original) The method according to claim 17, wherein a relative offset value is used to specify a value that is a fraction of the difference between the minimum value and maximum value of any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components.

20. (original) The method of claim 19, wherein a fractional part of a floating-point code element value comprises said relative offset value.

21. (cancelled)

22. (currently amended) The method according to claim 1, wherein the waveform type of said Ultra Wideband waveform comprises at least one of:

a square wave pulse;

a sawtooth pulse;

a Haar wavelet pulse;

a Gaussian monopulse;

a doublet pulse;

a triplet pulse; and

a set of wavelets.

23. (currently amended) The method according to claim 1, wherein each of said at least one code element value corresponds to a value defined within a layout comprising discrete non-temporal ~~pulse~~ characteristic values.

24. (currently amended) The method according to claim 1, wherein each of said at least one code element value corresponds to a value defined within a layout comprising a range of non-temporal characteristic values and discrete non-temporal characteristic values.

25. (original) The method according to claim 9, wherein said layout is a delta value layout.

26. (currently amended) An Ultra Wideband system comprising:

an Ultra Wideband Transmitter;

an Ultra Wideband Receiver; wherein said Ultra Wideband Transmitter and said Ultra Wideband Receiver employ at least one code, wherein said at least one code comprises at least one code element value, and said at least one code element values being associated with at least one non-temporal ~~pulse~~ characteristic of at least one Ultra Wideband waveform to define one or more communication channels, said at least one non-temporal characteristic comprising at least one of an amplitude ~~and~~ or a waveform type.

27. (cancelled)

28. (cancelled)

29 (cancelled)

30. (cancelled)

31. (currently amended) The Ultra Wideband system of claim 26, wherein said at least one code element values ~~are~~ is associated with at least one temporal characteristic in addition to said at least one non-temporal characteristic.

32. (previously amended) The Ultra Wideband system of claim 31, wherein said temporal characteristic corresponds to a position in time.

33. (currently amended) The Ultra Wideband system of claim 26, wherein each of said at least one code element values comprises an integer or floating-point value.

34. (currently amended) The Ultra Wideband system of claim 26, wherein each of said at least one code element values indicates any one of:

at least one component;

at least one sub-component of said component; and

at least one smaller component of said sub-component established by recursively breaking down said sub-component into smaller parts,

wherein said at least one component, said at least one sub-component, and said at least one smaller component are defined within at least one layout comprising a range of non-temporal ~~pulse~~ characteristic values.

35. (previously amended) The Ultra Wideband system of claim 34, wherein any one of said at least one component is any one of:

a same size; and

a different size

than others of said at least one component, and

wherein any one of said at least one sub-component is any one of:

a same size; and

a different size

than others of said at least one sub-component, and

wherein any one of said at least one smaller component is any one of:

a same size; and

a different size

than others of said at least one smaller component.

36. (previously amended) The Ultra Wideband system of claim 34, wherein said at least one component, said at least one sub-component, and said any number of smaller components comprise at least one non-allowable region established by at least one rule.

37. (previously amended) The Ultra Wideband system of claim 36, wherein said at least one rule establishing at least one non-allowable region is based on any one of:

a minimum value; and

a maximum value,

of any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components.

38. (previously amended) The Ultra Wideband system of claim 36, wherein said at least one rule establishing at least one non-allowable region is based on minimum and maximum values within any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components,

within a layout.

39. (previously amended) The Ultra Wideband system of claim 36, wherein said at least one rule establishing at least one non-allowable region is based on at least one non-temporal characteristic value of at least one other pulse.

40. (currently amended) The Ultra Wideband system of claim 39, wherein said at least one rule establishing at least one non-allowable region establishes a minimum value difference from said at least one non-temporal characteristic value or a maximum value difference from said at least one non-temporal characteristic value.

41. (currently amended) The Ultra Wideband system of claim 39, wherein said at least one rule establishing at least one non-allowable region establishes a region bounded by a minimum value difference from said at least one non-temporal characteristic value and a maximum value difference from said at least one non-temporal characteristic value.

42. (currently amended) The Ultra Wideband system of claim 34, wherein an established offset value is used to specify an exact non-temporal characteristic value within any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components indicated by said at least one code element value.

43. (currently amended) The Ultra Wideband system of claim 42, wherein an absolute offset value is added to the minimum value of the component, sub-component, or smaller component to which the at least one code element value is mapped.

44. (previously amended) The Ultra Wideband system according to claim 42, wherein a relative offset value is used to specify a value that is a fraction of the difference between the minimum value and maximum value of any one of:

said at least one component;

said at least one sub-component; and

said any number of smaller components.

45. (previously amended) The Ultra Wideband system of claim 44, wherein a fractional part of a floating-point code element value comprises said relative offset value.

46. (cancelled)

47. (currently amended) The Ultra Wideband system according to claim 26, wherein the waveform type of said Ultra Wideband waveform comprises at least one of:

a square wave pulse;

a sawtooth pulse;

a Haar wavelet pulse;

a Gaussian monopulse;

a doublet pulse;

a triplet pulse; and

a set of wavelets.

48. (currently amended) The Ultra Wideband system according to claim 26, wherein each of said at least one code element value corresponds to a value defined within a layout comprising discrete non-temporal ~~pulse~~ characteristic values.

49. (currently amended) The Ultra Wideband system according to claim 26, wherein each of said at least one code element value corresponds to a value defined within a layout comprising a range of non-temporal ~~pulse~~ characteristic values and discrete non-temporal ~~pulse~~ characteristic values.

50. (previously amended) The Ultra Wideband system according to claim 34, wherein said layout is a delta value layout.